

cq-tv

USEFUL INFORMATION

As at September 1st, 1953, international standards for TV are as follows:

System:	405	525	625	lines
	50	60	50	fields/sec
Bandwidth	3Mc/s	4Mc/s	5Mc/s	
Black level	30%	25%	25%	of peak white value.
Line period	98.8μSec	63.5μSec	64μSec	
Line blanking	18.0μSec	11.5μSec	11.5μSec	
Front Porch	1.5μSec*	1.6μSec	1.6μSec	(BBC 1-1.5μSec)
Line Sync pulse	10μSec	5μSec	5.35μSec	
Field period	20mSec	166.7mSec	20mSec	
Field blanking	1450μSec	1100μSec	1600μSec	
Coincident with	1st Sync	1st equalising	1st equalising	
Field sync pulse*	40μSec	27μSec	26μSec	
No. of field sync pulses in field period	8	6	6	
Equalising pulse width	-	2.5μSec	2.5μSec	
Field driving pulses	400μSec	500μSec	500μSec	

Note: \* Instead of considering the "frame sync pulse" (old notation) as being filled up with inverted half-line pulses, consider the field sync pulses switched in during this time. i.e field sync width plus space width times number of pulses  $40 + 10 = 50$ ,  $x 8 = 400\mu\text{Secs}$  total, which is the same as the old "frame sync" pulse width.

625 line figures vary slightly in different countries.

TEST CHART LINE WIDTH CALIBRATION

Members drawing their own test patterns may be interested in the following figures. These are for a picture area  $10'' \times 7\frac{1}{2}''$ , and are based on 405 line working, ie  $82.5\mu\text{Sec}$  per line is active picture ( $80.8\mu\text{Sec}$  according to above figures).

Lines/pic. height	Lines/p. width	Lines/l" w	Freq	Freq	L/H	L/W	L/l" w
61.5	82	8.2	0.5	0.203	25	33.5	3.53
123	164	16.4	1	0.406	50	66.6	6.66
246	328	32.8	2	0.812	100	133.3	13.3
368	492	49.2	3	1.62	200	266.7	26.7
492	656	65.6	4	2.44	300	400	40
615	820	82	5	5.25	400	533	53.3
736	984	98.4	6	4.06	500	666	66.6
				4.88	600	800	80
L/H	L/W	L/l" w	Mcs	Mcs	L/H	L/W	L/l" w
====	====	====	====	====	====	====	====

Designed as an introduction to amateur television transmission, the series of articles that have appeared in the RSGB "Bulletin" will be of value to any BACs who are a bit shaky on fundamentals. These articles have appeared in Nov '52 ("Fundamentals"), Feb '53 ("Scanning System and Video Amplifier"), April '53 ("Video Amplifier, Time Bases and Power Supplies"), and September '53 ("A Simple Live Camera and Pulse Generator"). The series is to be of 6 parts (Mixing Units and Modulators, and RF equipment). The "Bulletin" also carries a bimonthly column of TV happenings, and specimen copies can be had from RSGB HQ, 28, Little Russell St, WC1.

October 1953  
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Essex.



Number Eighteen  
Fifth Year.

The British Amateur Television Club is affiliated to the Radio Society of Great Britain.

Editor's Note:

There are several small points to be cleared up this month. First of all:

LICENCES: I have had another letter from the GPO concerning TV licences. This states that there is no intention of introducing a "Technicians Licence"; the main change will be that they will be prepared to issue amateur vision licences to persons who do not hold amateur sound licences, provided they are satisfied as to their technical qualifications. This will save the fee for the sound licence, and also remove the necessity for qualifying in more. The vision licence, in common with all other licences, will, in any case, be revised in the near future.

This is quite reasonable; no mention is made of likely fees - both the RSGB and ourselves have pressed for a reduction in cost - nor is anything said about a sound channel. Should anything more definite be announced, all members who have signified their interest will be notified by circular.

CAMERA TUBES: As explained on P2, there has been no further communication from Pye's concerning the reject Staticons and Monoscopes. 19 of the former and 11 of the latter are wanted. Please do not keep writing in to the Hon Sec; if I have your name, you will be notified immediately anything turns up!

STANDARDS: It has been suggested that we should standardise a size of transparency for tele-still work, so that several standard titles can be produced for the Club. It is suggested that 16mm cine size, and double-35mm still sizes should be adopted. Anyone in a position to turn out some titles in this way is asked to contact the Hon Sec.

RSGB SHOW: At this moment, it does not appear as if we shall be able to put on a live camera show at this year's exhibition (Wednesday 25th November to Sat 28th). In any case, we should prefer to put on a good camera show alternate years, and in other years to stress the essential simplicity of the majority of amateur TV work. Thus, this year we hope to have G2BCB's telestill unit, with the invitation to "Televise Your Own Call-sign"; displays of simple 70cm converters; Jim Russell's fb picture and waveform monitor; John Adams's telecine unit; films taken at last year's show, and this year's Dagenham show; and possibly Grant Dixon's colour camera. This will not be in action, if completed, due to restrictions imposed by the makers of the tube. As always, we require help on the stand. Your Hon Sec now has a job and cannot be there all the time. Will B.A.T.C.s who are coming to the show, and who could look after the stand for a few minutes (or hours) please write to me; also, I should be very pleased to hear of any equipment that could be loaned for the show. We also need some posters, should there be an artist in the Club?

PERSONAL: Please note that all correspondence should be addressed to me at

29, LOFTIN WAY, CHELMSFORD, ESSEX.

Letters to the old address will be forwarded, of course, but please save my mother the labour of re-addressing some 20 letters a week! See you at the RSGB Show?

M.Barlow, Editor.

THIS MONTH'S SHORT NOTES, SALES AND WANTS

PLEASE NOTE THE NEW ADDRESS OF THE HON SEC: 29 LOFTIN WAY CHELMSFORD. No telephone. A very few copies of Nos 14, 15, 16 and 17 are still available @ 1/6d. Two back copies files are now in circulation. Neither contains nos 14, 15, 16 or 17 (!), one is complete otherwise, one is missing nos 1, 8 and 11. Please do not keep these files more than one week.

Nothing further has come from Pyes. Order forms for Staticons and Monoscopes will be circulated as and when they become available. Part 4 of the introductory series on "Amateur TV Transmission" appeared in the September 1955 RSGB Bulletin. 1/6 ex RSGB. Congratulations to Mr and Mrs Tony Sale, and Mr and Mrs Alwyn Stockley, all married in August. Lets face it, girls - there's something about the BRTC....

LAPEL BADGES are in stock again @ 3/6 from the Hon Treasurer.

Lecture Tape no 1 on "Colour TV" by Grant Dixon, 45 mins, 7½"/sec twin track; apply to Grant at 23 Yeo St, Ross on Yeo.

TV SKED: TRANSFERRED TO 5612 kc/s @ 1450 on Sundays; please call if you can.

G2MJ recommends "Gascoigne" pipe fittings for making dollies, tripods, beams, etc. Gascoigne Ltd, Berkeley Ave, Reading make all sorts of fittings and junctions.

Grant Dixon recommends Ostwald Standard Colour papers for colour experiments.

OUR COVERS: The basic design was by Cedric Price, of St Johns College. You may have realised that the last (yellow) covers were mis-printed as a mirror-image rotated through 90°. Modern-minded members will appreciate the Symbolism; others will like to know that the circle is true, the aspect ratio of the cover is 3 x 4, the bars are 1.5 Mc/s to 0.5 Mc/s, and the two colours we have - blue and beige - appear the same shade of light grey on an image orthicon... Cut out your own title from the back page. Noted at the Radio Show: Pye's Industrial TV using a Staticon (Ian Waters); EMI TV using a midget CPS (G3EZA); a very fb pulse generator on G3IMH's stand, the RIBBLE Radio Club. This uses a servo corrected main oscillator and binary counters.

FOR SALE: Microammeter, calib Oil Temp; GEC 5" tube 10/-; R12 EHT root 17kV 6V htr offers to Ralph Hall, 16 Greenford Rd, Harrow, Middx.

EF50 (7) VR91 (15) EL7 (2) VR54 (7) 6AG8 (4) 6AC7 (5) CV75 (2) 6K7m (2) 6J5m (2) 6L7m (1) 6N7m (1) £4 the lot or will separate; also METERS: 2½" 100mA Weston 3" 300V Ferranti 3" 25V Ferranti, 2 2½" 350mA thermo, 2)" 1mA Victoria I.C, 3" 1V AC 2kV/V rectifier type Weston, 3" 100-0-100V, 3" 1500V E/static Everett, 3" 300V E/static extended to 9kV, £4 the lot or will separate. Books: Radio Receiver design, Sturley 5/-; The Cathode Ray Oscilloscope in Radio Research, Watson Watt, 5/-; Elec Maths for Radio Engineers, Fleming. 2/6; A course in Practical Maths, Saxelby, 10/-; Practical Maths, Starling and Clarke, 2/6, Maths for the Million Hogben, 5/-; Heat Light and Sound, Jones, 2/6; Measurements in Radio Eng, Terman, 15/-; Manual of Pract Physics, Hadley, 2/6; Radiant Energy, Larkin, 2/6, Calculus for beginners, Baker 2/6. Also mains transformers: 2kV 2mA 2V 2A 50 cycle 10/-; 6V to 4V 50c 2kV insul 2/6. Reasonable offers considered, or will swap for photo gear. Need: rangefinder, exposure meter, binoculars. C.H.Banthorpe, 130 Fairholme Crescent, Hayes, Middx.

Pink 2nd Ed brand New £3-15-0; via G3CVO. ("TV Engineering").

WANTED: 931As E.W.Fry, 23 Kenton Lane, Windsor, Berks.

JPF7 Scanning tubes for sale: guaranteed, but no bases: 10/- Baker, Endiston, Chester Rd, Woodford, Cheshire.

References: Feinberg "Introduction to Electronic Circuits" Theory of Multivibrators; "Waveforms" Radiation Lab P163 Multivibs; Sync/Vision/Blanking mixer, "Electronic Engineering" September '53; Proc.I.R.E March and July '53 "A Colour TV Slide Scanner" (Not given this title); November 50 Proc I.R.E "A Rooter for Video Signals" (Gamma correction circuit); Aug 51 Electronics "Colour TV Test Generator".

G3CTS Correction: Vision 427 Mc/s sound 423.5Mc/s.

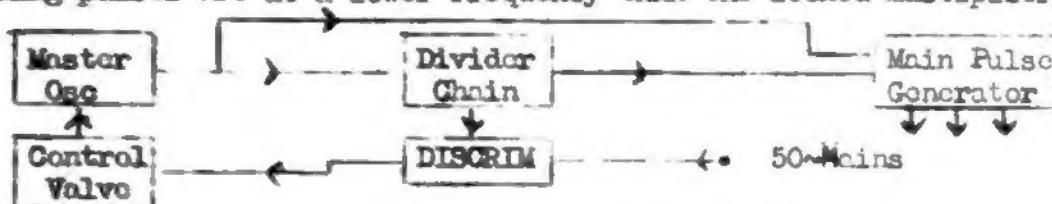
HELP WANTED AT THE BBC EXHIBITION IN NOVEMBER; GEAR? POSTERS? MAN THE STAND? mlml

SOME THOUGHTS ON COUNTERS

by G3CVO.

Interlacing affords an easy way of getting more lines per picture in a given bandwidth at the expense of picture repetition frequency. Thus, doubling the number of lines from say, 200 to 400, and halving the picture frequency from 50 per second to 25, gives a better picture under ideal conditions than formerly. Persistence of vision is sufficient to gloss over the slower repetition rate. As the principle of interlaced scanning is (normally) to scan alternate lines in alternate frames, or more accurately "fields" (2 fields per "frame", 25 frames per second), it is obvious that alternate fields must start at the beginning of a line and halfway through a line period. Put another way, there must be an odd number of lines per frame to obtain an interlace. This means that the line freq. must be locked to the field frequency, for if the line frequency should wander so that there is an even number of lines per field, then we shall be back to a sequential picture with half the number of lines per field and twice as many frames per second. Consequently, many of the free-running and crystal controlled pulse generators described in "CQ-TV" in the past will give an interlace for a short period, if accurately adjusted, but as the mains frequency wanders, or the line frequency varies, the interlace will be lost again. To overcome this, a counter circuit is incorporated to lock line and field frequencies together.

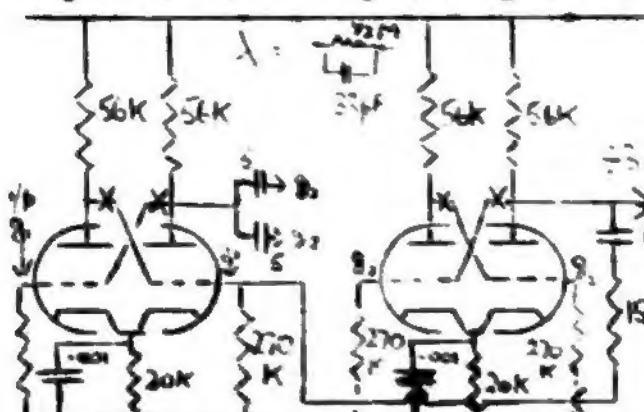
A counter consists of a chain of divider circuits counting down from a master oscillator to 50 cycles, a discriminator to compare this 'local' 50 cycles with the mains, and a control valve, operating from the discriminator output, to correct the original master oscillator frequency. Note that, for BBC standards, the line frequency of 10125 cps cannot be divided exactly by 50; half-line freq. of 20250 cps is therefore used in the master oscillator, and these half-line pulses are used instead of line pulses during the field interval to keep the receiver line time base in lock. It is possible to multiply up to 20250 cps from 50 cps, but the stability of the multipliers is not as great as that of dividers, as the locking pulses are at a lower frequency than the locked multiplier.



Outline of basic counter chain and control network.

The simplest counter circuit is the binary counter. This divides by 2, and without feedback is independent of input frequency, thus requiring no adjustment in use. By feeding back between stages, division by any whole number

is possible. The figure shows a typical pair of stages which by themselves would divide by four, but with the feedback added divide by three. Although the method is highly reliable, and used in most professional equipment, it is extremely wasteful in valves from an amateur point of view. To divide by 405 requires at least 9 double triodes, dividing by 15 and 27, or 10 if a 5-9-15 count is used. One further advantage, however, is that a large number of pulses of various frequencies are available for test purposes.



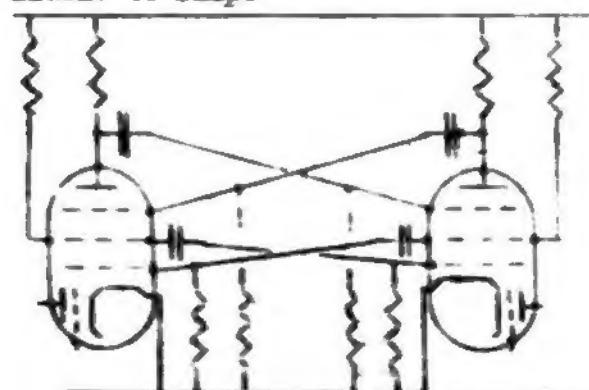
In order to economise on valves, various circuits that divide by more than 2 per stage have been developed. These have the disadvantage that they need careful setting-up in the first place, and may divide by a wrong number on switching on, especially if a high count is being used. The smaller number of valves required usually offsets those points, which can also be minimised by incorporating stabilising circuits. We have already seen a typical blocking-osc divider, counting 9-9-5, in "CQ-TV" No 3. This used only 2 6SN7s in the divider chain, but without isolating diodes between the stages, BO dividers are very difficult to adjust, and are also rather prone to jitter. A better approach is by the use of multivibrators with resonant L-C stabilisers. One such, counting by 27 and 15, was in "CQ-TV" No 13. Other types of oscillators, such as transistors and phantastrons can be used; see "CQ-TV" No 8.

A further means of counting is to use a step waveform. Basically, the incoming pulses are used to charge up a condenser; when a certain voltage is reached, a valve is triggered and produces a pulse. One obvious snag is that as the condenser charges exponentially, the increments of voltage added per input pulse at high counts is small, and the counter is liable to jump a count. It is possible that the use of a vari-mu valve for the triggered stage would help here, but we have no details of the experiment having been tried. The Hallmark divider was mentioned briefly in "CQ-TV" No 9; the figure shows a 5:1 counter designed by

member C.H.Bantherope, and fully described in "Electronic Engineering". For smaller counts, eg of 5, V2 can be omitted, and the left hand diode anode is returned to earth. A similar step counter is used in ZL1GS's pulse generator described in this issue.

Those who have APN4 indicator units may like to be reminded that there is a complete divider and discriminator built in the unit, dividing 100 kcs to 50 cs. PA0ZX uses a similar counter (blocking oscs plus isolating diodes) in his timer unit.

Another type of counter is the gating-coincidence type, in which a 10 $\mu$ sec 50 cycle pulse is compared with the 10 $\mu$ s line pulses. A unit on these lines was described in "CQ-TV" No 2, and has the advantage that no counters are used at all. Finally there are the more "accidental" frequency locks not using counters, as used by G3ETI ("CQ-TV" No 12). These usually require continuous monitoring, and are liable to slip.



Carrying on the search for really economical dividers, a two-valve circuit is given. Two ECL80s multivibrate between control and screen grids to divide by 15, and then between suppressors and anodes to divide by a further 27! One triode is used as the master oscillator, and the other as the control tube. Similarly, a hexode or similar tube could be used as a multiple blocking oscillator, dividing by successive grids. F.Lee is working on a double triode multiple blocking osc. type of counter. These circuits are suggested for those with an experimental turn of mind, and the

author would be very pleased to hear of results with any of them.

The discriminator is quite straightforward. Normally 6.3V AC from the heater supply is used together with the locally generated 50cps. This should be a sine wave for best results, but the longest available pulse, eg the field blanking pulse, will be satisfactory. The smoothing circuit can have a short time constant for normal work, and a long one should it be desired to lock a telecine scanner to the pulse generator, rather than to take the sync pulses from contacts on the driving shaft. For remote pickups, the control transmitter usually radiates a 50 cycle control signal, and the local master oscillator then locks in with the main transmitter.

The circuit of the control valve depends upon the type of master oscillator employed. With multivibrator and MO types a simple voltage amplifier is all that is required; with sine wave MOs a reactance tube is needed. In general, a multivibrator MO, unstabilised, is quite satisfactory for this work, particularly as it is almost essential to use a fully regulated power supply in any case.

The correction voltage from the control tube can also be used to feed the individual dividers, although this is not often done. PA0ZX does this; it is also possible, presumably, to use gating diodes to apply the correction voltage to either the MO, or the correct divider, depending on the percentage error to be corrected. This is perhaps an unnecessary refinement, for it will be found that with care, any of the counters described will operate satisfactorily without re-adjustment over long periods of time.

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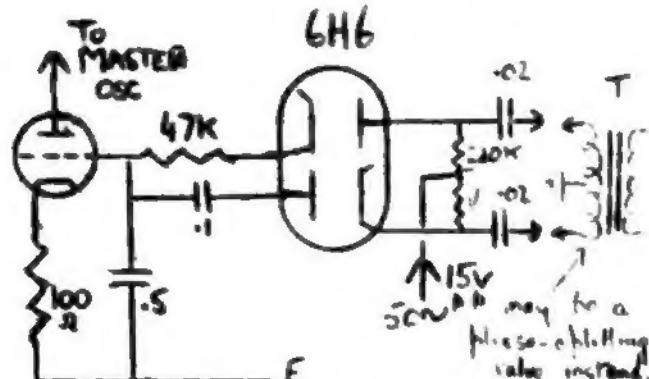
#### A COMPLETE 405 LINE DOUBLE-INTERLACED PULSE GENERATOR

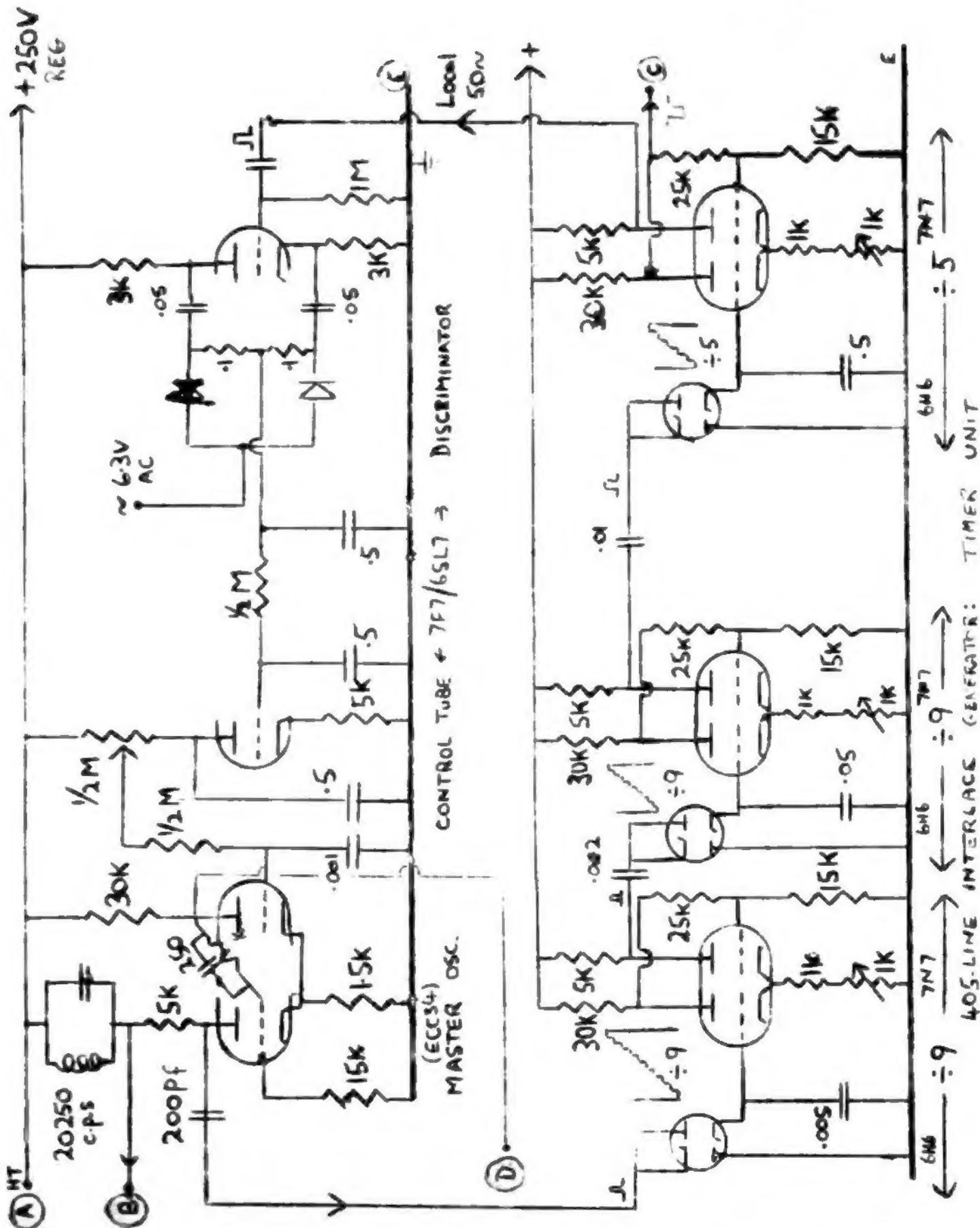
On the next two pages will be found the circuit of a simple but very effective pulse generator sent in by Jack Mason, ZL1QS, of Auckland, N.Z. An ECC34 stabilised multivibrator is used as the 20250 cs oscillator, the stabilisation being provided by the resonant circuit LC. Three step counters (9-9-5) using 6H6 isolators and 7N7s (6SM2, 12AU1X/T7 equiv) give a local 50 cycle signal, which feeds one half of a 7N7 phase splitter, and thence the discriminator diodes. The other half of the 7N7 is the control tube for the MO.

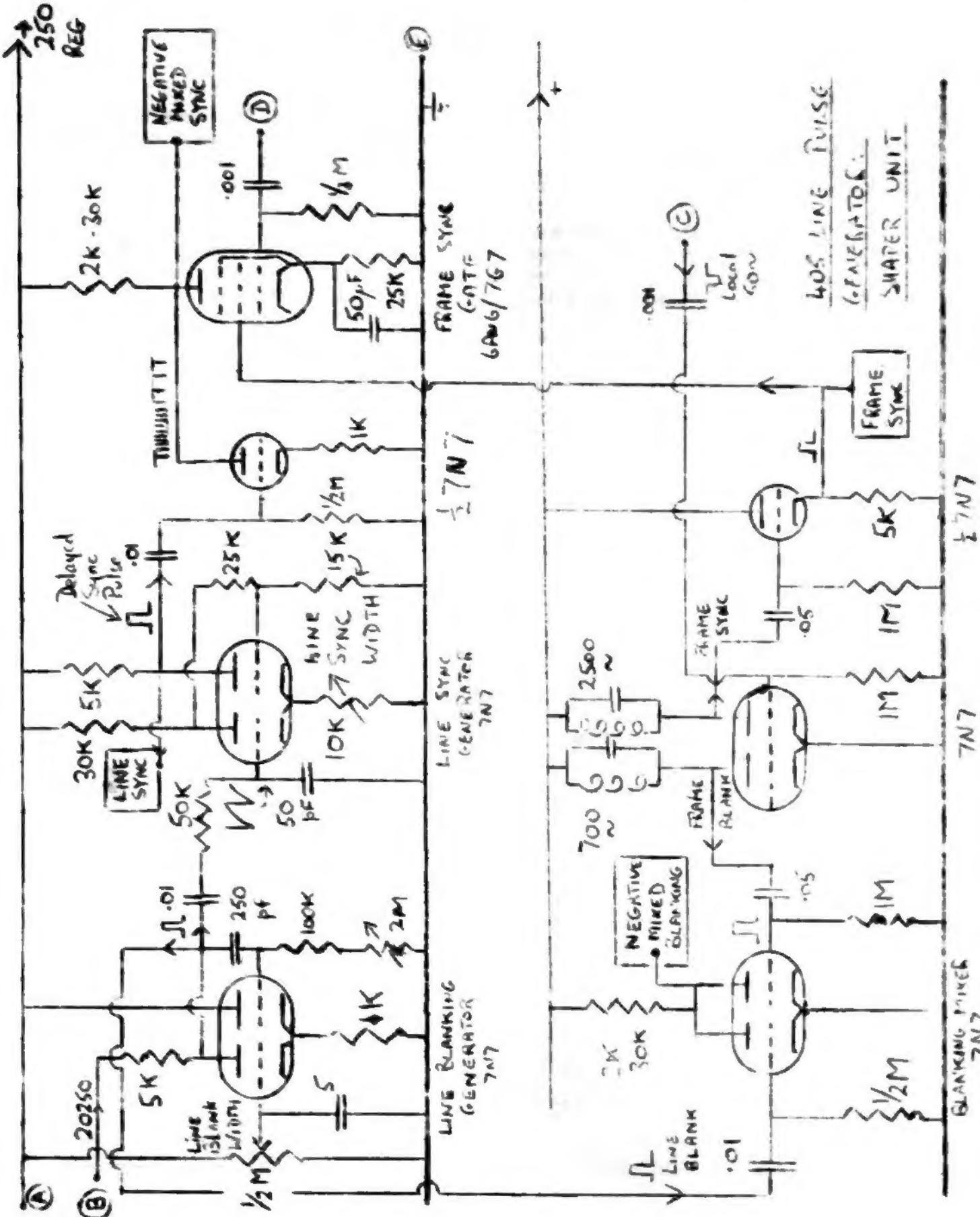
Another 7N7 acts as a combined cathode-coupled oscillator at 10 kcs, and clipper for the 20250 sine wave from the MO stabiliser, and this tube gives the line blanking of 16.5  $\mu$ secs. A sawtooth phase delay follows to delay the sync pulse by 0.5 $\mu$ Sec - the front porch - and the line sync pulse, also generated by this stage is passed to the sync mixer ( $\frac{1}{2}$ 7N7). The 50 cycle local source is fed into both grids of a further 7N7 which has two tuned circuits in the anodes. These ring at 700 cs and 2500 cs (see "CQ-TV" No 14) so generating field sync and blanking pulses of 400 and 1400  $\mu$ secs respectively. Field and line blanking are mixed in a 7N7; field sync passes through a clipper ( $\frac{1}{2}$ 7N7) to the Field Sync Gate valve, a 7G7/1232 (6AU7 equiv, VR116 6F53?). This tube has a common anode load with the  $\frac{1}{2}$ 7N7 clipping the line sync, and serves to switch in the half line pulses from the MO during the field sync period, but to allow line sync to pass the rest of the time.

We like this circuit very much, particularly for its simplicity and reasonable economy in valves. Congratulations, on, especially as you are so far from any organised TV down there.

(See over).







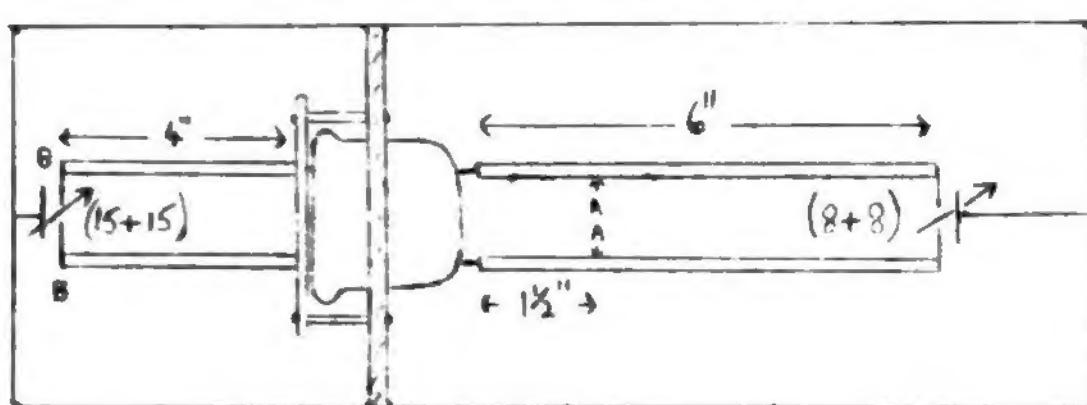
THE 832 AS A STRAIGHT POWER AMPLIFIER AT 70 CMS.

By G.M.King, G3MY.

(This design, like the 8012 transmitter described in "CQ-TV" no. 15, uses a well-known and reasonably easily obtained valve type. Although the 832 is not designed for operation at this frequency, it makes a good starting point, and the design can be modified for a QQE03/20 or similar tube should one become available).

I have found that an 832 can give a reasonable output at 420 Mcs as a straight, i.e non-multiplying, power amplifier. My own 832 was driven by a CV16, CV55 or CV82 in a type 105 unit, as a tripler. This in turn was driven by the little 2m portable rig described in the Short Wave Magazine last year. (Efficiency might be improved by running the penultimate stage as a doubler rather than a trebler, but this has not been tried). With an input of 20 watts to the 832, it was possible to obtain 6 watts of RF in an artificial load.

The physical layout is, of course, all-important, and is as shown in the diagram. The grid and plate lines are  $\lambda/2$ , long, shortened by split-stator condensers at the ends. An all-copper or brass construction should be used, and all joints must be well soldered. A screen between the two parts of the trough carries the 832 base. (NB. Dr King does not state whether this is a standard ceramic type, or one of the low-loss types with built-in bypass condensers. Experience indicates that the latter are much better at this frequency, but may not be essential - G3CVO). The grid and



A,8  
A,8  
H.T. 6<sup>1/2</sup>s  
16 turns, 18  
swg,  $\frac{1}{4}$ " diam,  
self-supporting.



plate lines are of  $3/8"$  silver-plated tube spaced  $1\frac{1}{2}"$  centre to centre. The main trough has closed ends, and a close fitting lid; ventilation holes must be drilled in the sides and lid. Inset are details of the HT and bias feed chokes, and the split stator condensers. These are made by soldering flat plates to the end of the lines and having an adjustable plate attached to the lid of the box.

No details are given of bias and HT conditions, but remembering that the tube must be under-run (except on LT!) at these frequencies, 200 to 250V HT is indicated, and some 3 or 4 mA of grid drive through 10K and 9V fixed bias, or so.

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Part two of the article on a 70 cm converter is being held over for the next edition. We try and print something of 70 cm interest every edition, and are always pleased to give up space to suitable articles.

IMPROVING THE PERFORMANCE OF THE 5527

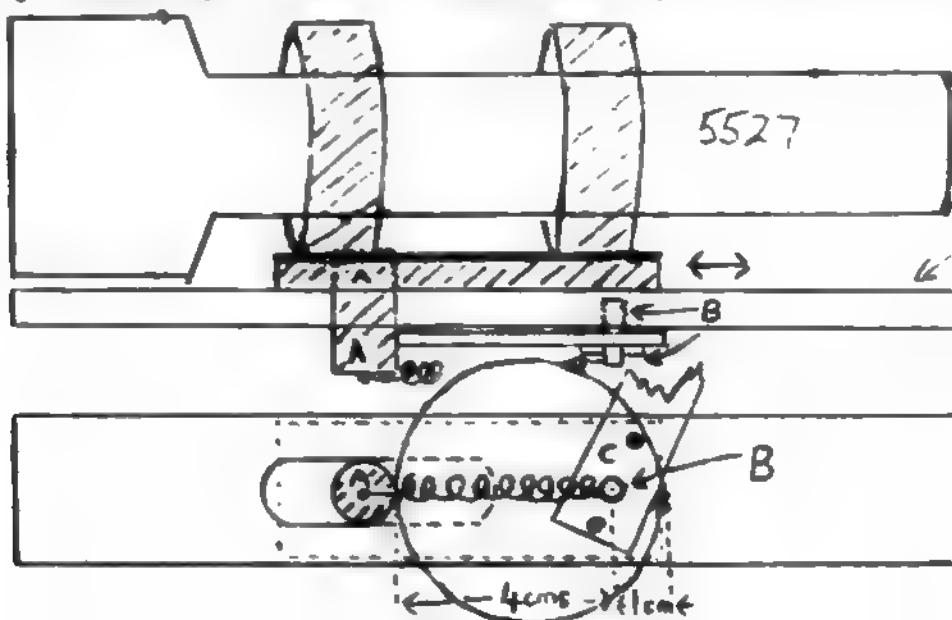
By Hendrik de Waard, PA6ZX.

By paying attention to the minor points, results with the 5527 can be extremely good. After all, the pundits still say that an Iconoscope gives the best quality picture, even if the sensitivity is low - and the 5527 is not as insensitive as some would think!

First of all, let's consider the matter of screening. The mumetal screen is absolutely essential, to prevent stray pick-up, including trouble with the earth's magnetic field. Without this screen, it was found that turning the camera round produced most severe alterations in the signal output; it was even possible to get no picture at all, even with correct scans. Having screened the tube, we now proceed to introduce some stray magnetic fields! Take some small magnets, about 1" or 2" long - broken twist drills which have been stroked with an old loudspeaker magnet are ideal and put them near the tube, opposite the deflection plates. Do not put them so close as to deflect the spot, but adjust their position whilst watching the picture. It will be found that a very great improvement in picture quality and output can be made in this way. The precise mechanism is not too clear - it may be due to a change in the spot shape, but this does not seem to account for all the improvements.

Next, try back-lighting the mosaic with some small pea-lamps around the end of the tube. These are connected in series with a variable resistor, so that their brilliance can be varied for best effect; the sensitivity can be improved a lot.

Now we'll leave the electrical side for a moment, and discuss some mechanical arrangements. With some cameras, especially those with lens turrets, it is easier to move the tube rather than the lens to effect a change in focus. A useful device for this can be made from the holder of a 3BPI as used in a certain surplus radar unit. These have been freely available (Clydesdales, etc) and have a receiver unit connected to a remote 3BPI unit. The latter is finished in black crackle, and consists of a screen mounted on two channel pieces forming an adjustable mounting. Remove the 3BPI and the rise-and-fall prop piece. By re-arranging the parts, the bottom rail will slide on the tube holder. This is a good mechanical fit; if the unit has been slightly bent, or is stiff, the bearing surfaces may be lightly sandpapered and then greased. It will be found that the 5527 will fit very nicely into the tube retaining straps - it even has the same base as the 3BPI! The screen, however, is only aluminium, for all its black crackle, and it must be replaced by mumetal. The



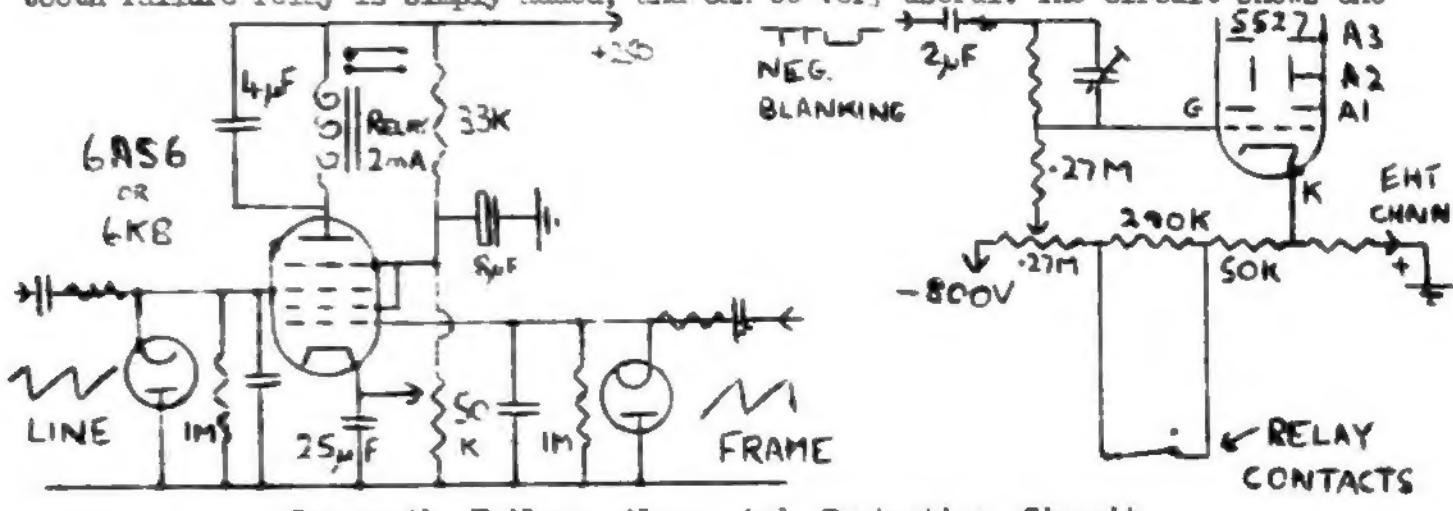
④ 3" or so

SLIDING BASE FROM  
3BPI UNIT.PARTS SHADED  
THUS // SLIDE  
IN THE BASE UNIT.

drawing shows the rough idea. It also shows the construction of the focussing control, which is of an unusual design.

One of the difficulties with focussing controls is that when the lens is focussed near infinity, a very slight movement of the lens (or tube) is needed for a large change in focus, whilst at near distances, the lens requires to be moved quite a long way before the focus is altered to any extent. The ideal, then is a device that gives a fine adjustment at far distances, and a coarse travel at near distances. The mechanism shown does just this; the pin A is fixed to the tube holder, and slides in a slot in the base-plate. An eccentrically mounted disc pivoted at B is attached to an arm C which actually connects with the focussing lever or knob. A spring keeps the pin A against the disc. With the dimensions given a movement of C through 45° moves the lens by 1cm, quite enough for a 5cm lens to cover 4' to infinity. Other ranges and lenses can be covered by alteration of the position of the pivot in the disc.

Back to electronics - the 5527, like many tubes, is expensive; a saw-tooth failure relay is simply added, and can be very useful. The circuit shows one



way of doing this. Line and frame sawteeth are fed into a mixer stage, so biased that a 2mA relay in the anode does not open unless one or both sawteeth fail. If the relay does open, an extra 200K of bias is added to the 5527 chain, cutting it dead. Another set of relay contacts lights an alarm lamp or buzzer. One advantage of this circuit is that it is impossible to switch on the 5527 without first switching on the timebase IFs; extra contacts can be used as EHT interlocks for additional protection if required.

Although the above points are specifically for the 5527, they apply also to other types of camera tubes, of course.

(To be continued in a later edition).

#### THE DIGENHUM SHOW, 1953

Doug Whele, G3LJU, and the rest of the group had put in some hard work again this year, only to be nearly flooded out on the first day of this two-day show. Two cameras were available, one being the 5527 unit used in 1952, and the other a new one using a reject studio tube, and built in an ex-airborne TV unit. Eddie Barrell, G2BCB, brought his telescop scanner from Colchester. This unit is very nicely finished, and gave good results in spite of an EHT failure. The control rack of last year has been dismantled, and a push button mixer unit installed instead, together with a collection of assorted units spread out over a large table. Owing to the rain,

it was only possible to run the new camera; even so it was necessary to keep umbrellas and raincoats over all the equipment and staff in the studio. The second day's weather was a great improvement; amongst the BATC's present were George Short, Fred Rose, Geoff Hill, John Adams, John Woodfield, Michael Barlow plus all the Dagenham and Romford group. Congratulations on the show, men - especially for the First Prize for the best stand!

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"WHAT THE OTHER BLOKE IS DOING ..... DEPT.

Sid Horne G3IIL hopes to receive G2WJ/T from his new QTH; a good VHF site, he says. Don Warner G3F2C of the Vickers-Armstrong Social Club has started a TV branch of their radio Society. C.H.Banthorpe reports that he has obtained results from the 5527 camera that he is building for the TV Society. He is now awaiting the effects of RF in the unit from the tx! He includes the news that a good pulse generator he has developed has appeared recently in "Electronic Engineering". Brian Henniker G4FUU suggests that the circuits in "CQ-TV" should be republished in book form... care to redraw them, am? (Plans are in hand for improving circuit reproductions. MB).

R.J.Johnson of Stafford is another of the Colour Brigade; he is planning a 150 frame sequential colour system. Messrs Lobb and Assenheim are also experimenting with colour; Grant Dixon is ironing out the inevitable bugs in the colour camera. P.A.Waspe is digesting the back copies and other literature.... Pluff Flownan G3AST is preparing for a Staticon tube. He enquires whether anyone knows what the VCR517c is like as a monitor tube. He also points out that the o/p from the Staticon oct in the last edition is below BTSC standards...!

George Short sent in a good, long description of the Dublin Show; this was a success in spite of illness, breakdowns, and Customs Trouble! Radio Eireann sent a recording car, and quite a stir was caused. Well done George! David Nolan has been organising the Irish A.T.C., but we have no other news (and where is the publicity material, David?). Frank Lee has sent in details of a simple pulser, and is working on a Counter chain using ONE 6SN7! R.Yates is going to build up the pulser in the last CQ-TV, and a 951A unit. He wants a 5527 from anyone changing to a Staticon. Stuart Sansom is now with High Definition Films.... Ian Macwhirter G3ETI made a good show at the Manchester Tech College show; John Woodfield G3HZK is going back to the same town, so we shall expect some increased VHF and TV activity now. Jimmy Bramhill G2BML's new QTH is 200 ft up.... He has also had a copy of "Inexpensive Picture Generator" from August 1950 "Electronics" photostated; a positive print is available from HQ, or Jimmy has the negatives. F.May of Leicester wants the circuit of the Telequipment Waveform Generator type WG/4. Any offers? Al Bevington G5KS has been very ill recently, but we hear that he is now convalescing satisfactorily. Good luck, Al. Fred Rose's Secret Weapon progresses slowly; Fred has given up the Morris after the strain of Coronation TV!

Ian Waters of Ely has been extremely busy; several more shows (we've lost count) plus a lot of overtime involved with the Pye Industrial TV units seen at the Radio Show. Members who saw the gear will note that Ian takes as much care with his professional equipment as with the amateur gear! Ian is now awaiting a medical prior to his call-up. His Photicon camera now has an electronic viewfinder, and another 90' of that beautiful camera cable.... By the way, the man waving big white catalogues in front of the Pye TV camera was SHZK - who helped with the EAI Industrial TV gear - trying to prove a Point! G.C.Hill at Birmingham is rebuilding... So is Doug Wheele G3AJJ, in between swotting for an exam; he has several improvements in mind.

Chris Batty (Chesterfield) has built a telestills unit with an AGR1 scanner and CVR97 monitor. Due to low EHT, results are not too good as yet. He's making a point of coming down to the RSGB show to see how ZGCB does it! John Nettell (Ringwood) has laid on a couple of assistants, and has a telestills chain 80% complete. He wants

NEW MEMBERS:

T.A.Herbert	25, Oakwood Gardens, Seven Kings, Essex.
Dr. M.King GSMY	22, Priory Rd, Sheffield, 7.
R.G.B.Vaughan GSFRV	1, Alma Rd, Carshalton, Surrey.
D.W.Davidson	c/o Canadian Aero Services Ltd, 348 Queen St, Ottawa, Ontario.
R.Seymour	89, Bramley Way, Ashstead, Surrey.
F.E.May	19, Probend St, Leicester.
C.W.King-Church	5, Newgate St, Doddington, March, Combs.
A.H.Baker	11, Huntingdon Rd, Chatteris, Combs.
P.A.Waspe	2, Dovehouse St, Chelsea, SW8.
P.J.Bendall BRS20035	8, Belvedere West, Danbury, Nr Chelmsford, Essex.
N.W.Rignall	142, Rainsford Rd, Chelmsford, Essex.
R.Kirr	57, First Avenue, Broomfield Rd, Chelmsford, Essex. Tel 55828
M.J.Powell GM5LJE	15, Tudor Ave, Chelmsford, Essex.
E.H.Butcher G5CUH	Rectory Cottage, West Hanningfield, Chelmsford, Essex.
J.Mason ZL1QS	627, Manakau Rd, Epsom, Auckland, New Zealand.
A.Veart	c/o P.O Titirangi, Auckland, New Zealand.
C.Newton G2FKZ	105, Underhill Rd, Dulwich, SE22.
S.M.Sugden G5GSS	185, Henlet Ave, Cheam, Surrey.
P.J.Wright G5JDM	65, Probert Rd, Oxley, Wolverhampton, Staffs.
Aberdeen Radio Society	c/o A.G.Knight, 6, Blenheim Lane, Aberdeen.
J.E.Bowie	13, Clarence Drive, Hyndland, Glasgow W2. Tel West 844.
E.Marko W2MFQ	13-18, 127 Street, College Point 56, New York, USA.
G.H.Addison G3RAY/T	2, Warren St, Leicester. Tel 58009.
W.J.Hollies	80, Henley St, Mansfield, Nottingham, Yorks.
D.N.Siblcy	214, 5th St SE, Medicine Hat, Alberta, Canada.
R.Boyer	11, Greenway, Compton, Shafford, Beds.

(256)

Changes Of Address:

B.Henniker GM5FUU 6, Lovedale Grove, Balerno, Midlothian; J.Bramhill G2BML 8, Honeycroft Hill, Uxbridge, Middx; T.A.Thomas 20, Ulwin Ave, Byfleet, Surrey; J.Sansom 22, Courtfield Gardens, West Ealing, W13; S.Horne G5LKL 4, Cherrydown Rd, Sidcup, Kent; A.E.Sale "Briardene" Hockley Rd, Rayleigh, Essex; L.Gostelow G2FOW 4, Harvey Rd, Cambridge; J.A.Hedges 35 Ferrymead Ave, Greenford, Middx; M.Barlow G3CV0 29 Loftin Way, Chelmsford, Essex.

to contact Mr Harris of the Huon, Bournemouth. Bill Wothington is building a pulser to give him everything, including test patterns of sawtooth, staircase, vert bars, peak white and syncs only.

Undoubtedly the best effort has been by G2WJ/T, as reported in the Bulletin and Wireless World. On August 1st, G3GDR at Ibbots Langley received 2WJ's tv signals on 436Mc/s, and has since repeated the performance several times. The distance is about 35 miles - easily a record for fixed station working in this country; the power used was just 2 watts peak white to the CV53 PA, grid modulated from the photicon line amplifier. I am sure all members will wish to join in congratulating Ralph and Jeremy on this very fine effort. Incidentally, Jeremy is now doing his National Service.

Overseas news (very brief): P.K.Saebo LA6QB says that LASYA and 4KA put out some closed circuit TV some time ago, but no licences are available, in Norway. Boerge Cederqvist OHENL hopes for a Staticon eventually; Alain Decavel F9MN has got the Lille lads interested; Pat Lobail F5HK has been writing it up in Radio-REF; Ted Carpenter and Jack Mason ZL1QS have been building telestills gear; A.P.Harding hopes to get some TV on the air in the Suoz canal zone, possibly on 1400 Mc/s. More space next time, please, Editor!

(L.M.L.)

